

Remarks

Applicant respectfully requests reconsideration of the rejection of the claims in view of the above amendments and the remarks set forth below. Claims 1-3, 5, 6, 13- 20 and 22 remain in the application. Claim 13 is amended. Claims 1-3, 5, 6, 14-20 and 22 remain unchanged.

35 U.S.C. §112, Paragraph 1

Claims 1-3, 5, 6, 13-20, and 22 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. More particularly, independent claims 1, 13 and 15 were rejected for reciting pixel row buffer detection techniques that were not discussed in the pending specification. Applicant has amended the paragraph beginning at page 4, line 13 of the specification to recite:

“A method to reduce the system clock frequency (F_{clk}) requirements is to use a random row access start with programmable line lengths. This scheme would allow systems that did not require the utilization of all pixels the ability to lower system clock and D/A requirements. FIG. 2 illustrates a row address selector 24 coupled to the imager 18 and a controller 23 coupled to the row address selector 24 and the s/h buffer 22 that could be programmed to randomly access a starting row in a liquid crystal display imager and selectively address rows having active video and avoiding addressing rows having all or substantially all unused pixels. The s/h buffer 22 is coupled to the controller 23 to enable the controller 23 to detect if a row of pixels buffered in s/h buffer 22 has all unused pixels.”

Support for this amendment is found in original claim 21. Applicant respectfully reconsideration of the rejection of claims 1-3, 5, 6, 13-20, and 22 under 35 U.S.C. 112, first paragraph, in view of the above amendment and remarks.

35 U.S.C. §102

Claims 1-3, 6 and 13-20 stand rejected under 35 U.S.C. §102(e) as being anticipated by Kitagawa (U.S. Patent No. 5,844,539). For a reference to anticipate a claimed invention, each and every element of the claim must be found in the reference.

Claim 1 recites "A method of reducing a column clock time in a liquid crystal display, comprising the steps of...buffering a pixel row...*detecting if the buffered pixel row has all unused pixels...driving all pixels on a corresponding imager row to black simultaneously if the buffered pixel row has all unused pixels...*and...transferring the buffered pixel row to the corresponding imager row if the buffered pixel row has used pixels."

In the July 9, 2004 office action, Figs. 2B and 2C and elements 32 and 37 are described as disclosing the "detecting if the buffered pixel row has all unused pixels...driving all pixels on a corresponding imager row to black simultaneously if the buffered pixel row has all unused pixels" limitations of claim 1. Applicant respectfully disagrees. Figs. 2A-2C illustrate that video corresponding to three standards (having different resolutions) can be displayed on the screen 31 of the Kitagawa image display system. More specifically, Fig. 2A illustrates that video corresponding to the XGA standard (i.e., 1024 columns by 768 rows) can be displayed on the pixels 32 of screen 31 (i.e., 1024 columns by 768 rows) and when XGA video is displayed the XGA video will fill the entire screen 31. (Col. 5, lns. 8-20). Fig. 2B illustrates that video corresponding to the SVGA standard can be displayed on the pixels 32 of screen 31 and when SVGA video is displayed there will be a known active SVGA video area 36 (i.e., 800 columns by 600 rows) and a known blank region 37 (i.e., the remaining columns and rows) outside of the known SVGA video area 36 that is written with a black signal. (Col. 5, lns. 21-36). Fig. 2C illustrates that video corresponding to the VGA standard can be displayed on the pixels 32 of screen 31 and when VGA video is displayed there will be a known active VGA video area 36 (i.e., 640 columns by 480 Rows) and a known blank region 37 (i.e., the remaining columns and rows) outside of the known VGA video area 36 that is written with a black signal. (Col. 5, lns. 37-68):

Although Figs. 2B and 2C of Kitagawa do disclose displaying a combination of active video in a display region 36 and black video in a blank region 37 of a screen 31, Figs. 2B and 2C do not disclose the "detecting if the buffered pixel row has all unused pixels...driving all pixels on a corresponding imager row to black simultaneously if the buffered pixel row has all unused pixels" limitations of claim 1. Rather, Kitagawa appears to teach identifying the resolution of a received video signal (e.g., XGA, SVGA or VGA) and using the identified

resolution to determine whether blank regions will exist when the received video is displayed.

More specifically, Kitagawa discloses:

Based on a synchronizing signal SYNC supplied from the personal computer 1, the timing generator 4 controls the operations of the vertical scanning circuit 33, the horizontal scanning circuit 34 and the auxiliary scanning circuit 35 in the display panel 3 by outputting various types of control signals to the scanning circuits in accordance with the resolution of the video signals VSIG supplied to the display panel 3. The control signals include a vertical start signal VST and a vertical clock signal VCK which are supplied to the vertical scanning circuit 33, a horizontal start signal HST and a horizontal clock signal HCK which are supplied to the horizontal scanning circuit 34, a start signal PST and a clock signal PCK which are supplied to the auxiliary scanning circuit 35, and a control signal CTL used to switch over between the respective scanning circuits 33, 34 and 35. In this arrangement the video signals VSIG are written into the display region in the screen 31 including the pixels 32 which has the numbers of rows and columns adapted for the resolution of the video signals VSIG, and the black signal VBLK is written into the pixels 32 which belongs to the blank region 37 outside the display region 36. (Col. 4, lns. 38-58).

The "detecting if the buffered pixel row has all unused pixels...driving all pixels on a corresponding imager row to black simultaneously if the buffered pixel row has all unused pixels" limitations of claim 1 are an important aspect of Applicant's invention. For example, the claimed limitations enable a display to identify pixel rows in a received video signal that have all unused pixels in a way that is independent of knowing a resolution of a received video signal. This is important because the resolution of a received video signal may not be known, readily ascertainable or even correct if provided. As another example, the claimed limitations permit a display to detect, and quickly drive to black, a row of unused pixels found within an active video region (as opposed to a blank region surrounding the active video region).

As a result, it appears that Kitagawa does not appear to disclose or even suggest the "detecting if the buffered pixel row has all unused pixels...driving all pixels on a corresponding imager row to black simultaneously if the buffered pixel row has all unused pixels" limitations of claim 1. Since claim 1 contains at least one element that is missing from Kitagawa et al., Applicant respectfully proposes that the rejection for anticipation is overcome.

Dependent claims 2, 3 and 6, being dependent on and further limiting independent claim 1, should be allowable for that reason, as well as for the additional recitations that they contain. Therefore, it is respectfully proposed that the rejection for anticipation is overcome.

Independent claim 13 is amended to include elements similar to the elements of independent claim 1 and should therefore be allowable for the same reasons discussed above as well as for the additional recitations contained therein. Therefore, it is respectfully proposed that the rejection for anticipation is overcome.

Dependent claim 14, being dependent on and further limiting independent claim 13, should be allowable for that reason, as well as for the additional recitations that it contains. Therefore, it is respectfully proposed that the rejection for anticipation is overcome.

Independent claim 15 includes elements similar to the elements of independent claim 1 and should therefore be allowable for the same reasons discussed above as well as for the additional recitations contained therein. Therefore, it is respectfully proposed that the rejection for anticipation is overcome.

Dependent claims 16-20, being dependent on and further limiting independent claim 15, should be allowable for that reason, as well as for the additional recitations that they contain. Therefore, it is respectfully proposed that the rejection for anticipation is overcome.

35 U.S.C. §103

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitagawa in view of Fairbanks et al. (U.S. Patent no. 5,130,703). Claim 5 depends from claim 1 and should therefore be allowable for the same reasons as discussed for claim 1. Therefore, it is respectfully proposed that the rejection of claim 5 under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kitagawa in view of Huang et al. (U.S. Patent no. 5,965,907). Claim 22 depends from claim 15 and should therefore be allowable for the same reasons as discussed for claim 15. Therefore, it is respectfully proposed that the rejection of claim 22 under 35 U.S.C. § 103(a) is overcome in accordance with the above remarks and notice to that effect is earnestly solicited.

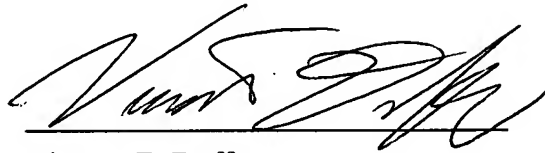
Having fully addressed the Examiner's rejections it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicants' attorney at (317) 587-4019, so that a mutually convenient date and time for a telephonic interview may be scheduled.

Ser. No. 10/003,543

PU000147

No fees, other than those discussed above, are believed due. However, if a fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,



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Patent Operations

THOMSON multimedia Licensing, Inc.

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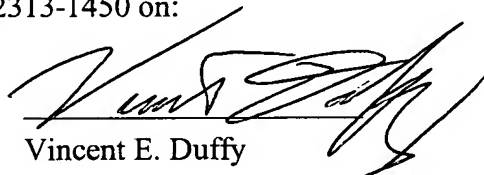
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January 26, 2005

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I hereby certify that this amendment is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

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Vincent E. Duffy



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PATENT OPERATIONS

Report to Data Base

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Atty: Vincent E. Duffy

Inventor(s): Kristopher Allyn Klink

Title: LIQUID CRYSTAL DISPLAY IMAGER AND CLOCK REDUCTION METHOD

APPLICATION AS FILED									
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